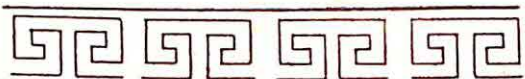




**INTRODUCTION TO
ECONOMICS OF
EDUCATION**



S. NATARAJAN

This book presents a comprehensive view of the theoretical framework of economics of education, educational planning and finance. It traces the evolution of economics of education as a *discipline*, examining its influence in *policy-making*, the various concepts implicit in it and critical references to India.

The latest trends in and statistical information about the economics of education are presented in the context of the National Education Policy (1986), the new Twenty-point Programme and the Seventh Five Year Plan targets and achievements. Material published by the National Institute of Educational Planning and Administration and current issues of journals has also been taken into consideration. The book closely follows the syllabi prescribed by the Annamalai and Madurai Kamaraj Universities.

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ECONOMICS OF EDUCATION***

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Madras*



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PREFACE

Education is no longer a privilege; it is considered to be a birthright of every citizen in a civilized society. With the great progress made by science and technology and the complexities of modern life, universal education of a reasonably good quality has become imperative.

Even after four decades of independence India is a country besieged with problems of population growth, rising unemployment, and an even-widening gap between the rich and the poor which are responsible for its low literacy rate. Massive investment, judicious planning and concerted efforts by the state and the people are necessary to wipe out illiteracy from the country.

The magnitude of the problem requires judicious selection of limited resources to ensure maximum efficiency. As the state involvement in the education of its future citizens is on the increase, an economic analysis of education is demanded by the economists.

The book is an effort to bring to light the analytical methods adopted by the economists to study the costs and benefits of and returns on public spending on education.

After giving the advantages of study of education from the economic angle and also stating what the critics say about them, I have dealt with vital general issues.

The specific issues including Human Resource Development, Manpower Planning, Educational Finance and Education Planning have been discussed in detail.

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EDUCATION IN THE MODERN WORLD

Universal Education

Education is no longer a privilege, it is considered as a birthright of every citizen in a civilized society. The great progress made by science and technology and the complexities of modern life have necessitated universal education of a reasonably good quality.

Article 26(1) of the Universal Declaration of Human Rights (1948) has proclaimed 'Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit.' Similarly Article 45 of the Constitution of India (1956) has laid down as a Directive Principle of state policy:

The State shall endeavour to provide, within a period of ten years from the commencement of the constitution, for free and compulsory education for all children until they complete the age of fourteen.

It is evident that our constitutional obligation and our democratic way of life have made education one of the imperatives of State Policy.

Shifts in Perception

Until the middle ages, education was highly influenced by contemporary religious philosophies. Generally priests also assumed the role of teachers, as educational institutions were attached to places of worship. These religious bodies emphasised moral education, literature, philosophy and theology. Educating the child, by and large, was considered the responsibility of the family and the religious sects.

Later, the Naturalists made a wholesome contribution to education by emphasising the importance of the child in the learning process. Educational psychology dominated the educational scene.

John Dewey stressed the importance of integrating education with social needs. Learning can become more effective when it is derived from purposeful activities. Children should be trained to acquire social efficiency for successful living in the modern world which is experiencing a series of crises.

The realisation that illiteracy is the major scourge of any society—particularly of the poor nations—has induced the United Nations Organisation and the developing countries to launch literacy programmes to reach the underprivileged.

Eradicating illiteracy is a great task which demands a major initiative by the government. Poor countries are finding it difficult to meet their social objectives without large scale funding of education. As the State involvement in the education of its future citizens is on the increase, an economic analysis of education is demanded by the economists. The economist enters with his analytical methods to study the costs, benefits and returns for public spending on education.

Economics and Education

For a long time economics was considered as a part of political science. Kautilya's *Arthashastra*, Thiruvalluvar's *Tirukural* and Machiavelli's *Prince* treated economics as part of statecraft. It attained a separate identity only in the last century.

Economics is described as the 'oldest of Arts, newest of sciences; indeed the Queen of all social sciences'. Man is not only a social animal, he is an economic being as well. Economic activities have undergone vast changes from the stone age to the modern age. Modern life requires complex skills and intricate knowledge and the role of the school is undergoing changes. Educational institutions have to cope up with the explosion of knowledge and are expected to provide a variety of subjects to an ever-increasing number of students. Naturally, education has become an expensive affair and without the participation of governments it will not be possible to widen its base and enrich it. Economics is one of the popular subjects among students. It can be conceived as a distinct but related subject of education. The interrelationships of these two subjects could be studied and an interface may be created to evolve better tools of research and gain new insights.

Economics of Education

As we have already seen, the economist tries to probe into the various

sources of educational finance, cost effectiveness, directions of development and similar issues. Economics has several branches like rural economics, monetary economics, microeconomics and macroeconomics. Economics of education is one of the youngest branches of economics. Schultz used the term in 1960 while addressing the American Economic Association. *The World Yearbook on Education* (1965) devoted an article on economics of education. During the past two decades, a number of economists showed interest in the economic analysis of education. In 1967, a conference on 'Measurement of Cost Productivity and Efficiency of Education' was held at Jaipur (India) under the auspices of the National Council of Educational Research and Training.

The advantages of studying education from the economic angle include:

- (a) the synchronising of the education system with the social system,
- (b) finding out the priorities in the National Policy on Education and their implementation,
- (c) helping the redistribution of resources and rearranging priorities,
- (d) promoting needed changes in education and making it socially relevant and economically productive, and
- (e) improving the techniques of educational planning and management.

However, a materialistic interpretation of education has got its own critics. They argue:

- (a) Education is not a purely economic activity. Acquisition of knowledge, culture, social skills and character are more important than economic returns from education. We should not reduce the noble art of teaching into a training programme for earning the daily bread.
- (b) Educational capital has a human character. Education makes man innovative and enables him to advance his civilisation. The influence of education on human mind and the emergence of social and political forces cannot be properly assessed.
- (c) A person does not use all the education he had acquired. Some part of it becomes inseparable from him. Unlike physical capital, educational qualifications could neither be mortgaged nor sold. It is not a property to be given as a gift.
- (d) The tools of economists are inappropriate to evaluate a discipline

which is based on eternal values. Economists should confine themselves to production-oriented activities.

We may conclude that though the purpose of education should be firmly based on values, mass education at considerable private and public finance requires the evolution of suitable strategies which could be derived from the economic analysis of the existing system of education.

Economists' View of Education

Adam Smith, the author of *Wealth of Nations* was a moral philosopher as well as an economist. He viewed education as a kind of capital which embodies acquired knowledge and skills. Education was at the centre of his thinking as it was the basis of good civil government, economic activity and progress. He noted that Scotland of his days and superiour intelligence and her people had providential and orderly habits due to the national system of education. He pleaded for raising the quality of education so that "the money of the parents, the time and the talents of children are not lost or injured from the inexperience and ignorance of those to whose care they are entrusted." Adam Smith advocated public spending to educate the poor.

Ricardo and Malthus argued that increase in economic well-being of the masses could be derived from decrease in population or increasing the capital. Malthus observed: "of the causes which tend to generate prudential habits, the most essential is civil liberty; and to the maintenance of civil liberty, political liberty is generally necessary. Education can do much under a good government." He advocated parish schools as mass education would lead to family limitation.

John Stuart Mill advocated public education as it inculcates habits of prudence, economy and self-improvement. He wrote: "Any well-intentioned and tolerably civilized government may think without presumption that it does or ought to possess a degree of cultivation above the average of the community which it rules, and that it should therefore be capable of offering better education and better instruction to the people, than the great number of them would simultaneously select. Education, therefore, is one of those things which a government should provide for the people." Mill favoured elementary education for all and advanced education for superior minds. He expected the government and voluntary agencies to help the poor parents.

Alfred Marshall developed the educational ideas of Adam Smith by describing education as a national investment. He noted:

There are few practical problems in which the economist has a more direct interest than those relating to the principles on which the expense of the education of children should be divided between the State and the parents. But we must now consider the conditions that determined the power and the will of the parents to bear their share of the expense, whatever it may be.

Marshall advocated the education of the working class and favoured technical education. He pointed out the impact of the family, especially women, on the betterment of children's environment and intelligence.

Karl Marx was agitated over the inhuman results of the division of labour and the exploitation of the working class. He asserted:

When the working class comes into power, as invariably it must, technical instruction both theoretical and practical, will take its proper place in the working class schools.

Evidently, the function of education in a socialist country will be to overcome the alienation of the worker from the means of production, while developing his technical skills. He will be a dignified human being in his capacity as a producer of wealth.

N.W. Senior was more categorical when he wrote: "The qualities which favour the accumulation of capital are perhaps more dependent on education and example than any other moral excellencies."

Defining Economics of Education

There are several definitions of economics which very aptly fit its applied branch — economics of education.

- (i) Economics of education is concerned with human welfare. Alfred Marshall defined economics as a study of mankind in the ordinary business of life. It examines that part of individual and social action which is most closely connected with the use of the material requirements of well being. No doubt, education broadens the mental horizon, enables the individual to enjoy the good things of life and raises his standard of living.
- (ii) Economics may also be defined as a subject which deals with unlimited human wants and the limited resources available to satisfy them. Lionel Robins made scarcity the central theme of economics. In the educational context, we need huge resources for quantitative expansion and qualitative improvement, but the resources at our disposal are very meagre.

- (iii) Economics may be termed as a study of growth. Prof. Samuelson considered education as a wise investment. He commented: "Economics is the study of how man and society end up choosing, with or without the use of money, to employ scarce productive resources that could have alternative uses to produce various commodities and distribute them for consumption, now or in the future, among various groups and people in society. It analyses the costs and benefits of improving patterns of resource allocation." The precise function of economics of education chiefly rests on growth combined with social justice.

Some Vital Issues in Economics of Education

There are several important issues which have generated a lot of controversy. Some of the specific issues are dealt with under relevant chapters. Let us examine a few general issues.

a) *Is Education an Investment or Consumption Good?*

Investment denotes using money to buy stocks, shares or property. Investment in durable goods bring higher dividends, profit, rent or interest. The investor's decision is influenced by possible returns on various kinds of investment. He prefers higher returns with least risk. J.K. Galbraith and Nobel Laureate Samuelson considered education as a sound investment. Galbraith declared:

A dollar or a rupee invested in the education of human beings will often bring a greater increase in national income than a dollar or rupee devoted to railways, dams, machines, tools or other tangible goods.

Prof. Samuelson recommends the education of children to gift of guilt-edged securities.

Some economists view education as a consumption good. John Maynard Keynes considered general education in USA as mere consumption. Only when learning is merely to spend the leisure time or for pleasure without any economic motives may we term it as consumption. Learning classical languages, fine arts and games in most of the cases is a consumption activity. Courses in humanities—some of them are called non-utility subjects—do not provide for better economic welfare. For many housewives, higher education is merely a status symbol.

Schultz argues: "Although education is in some measure a consumption activity rendering satisfaction to the person who receives an education, it is predominantly an economic activity undertaken for the purpose of acquiring capabilities that render future satisfactions or that enhance the future earnings of the person as a productive agent." Thus a part of it is consumer good similar to conventional, consumer durables and the other part is a producer good.

According to Prof. Brahmanand: "That part of education which is essential for the production process to grow at the optimum rate is investment and that part which is in excess of the needs and requirements of the economy is consumption."

In the prevailing conditions in India, we may consider school education as investment and general higher education as mere consumption.

b) *Is Education an Industry?*

Education is big business as it employs manpower, money and materials. Institutions aim at producing better students with less cost. There is competition among educational institutions and the users have a right to exercise their choice. Though an educational institution requires land, buildings, workers, instructional materials, these inputs cannot make it an industry. An industry is run for profit, educational institutions are motivated by service. There may be a few exceptions in the case of private institutions.

The difference between industry and education was summed up by Dr. Malcolm Adiseshiah in the following words:

Like any other industry, inputs in education which include lands, building materials, books, sports and scientific equipment and services of teachers are bought in the market, but unlike the industry, its output—namely, the education and training services it offers—are not sold in the market.

c) *Role of Non-formal Education as a Substitute*

Formal education is for the age group 5 to 25 or so. It has several levels and a variety of courses. For the young illiterates above the age of fifteen we have the National Literacy Mission.

For the dropouts, Distance Education Programmes are offered to help them in their social and career mobility. Non-formal education

requires state financing and it should be considered as a supplement and an alternative and not just a substitute.

When the general policy makers and development analysts began to study the relationship between education and national development, they found that the formal education system made only a limited contribution to development and that the potential of non-formal education to contribute effectively and quickly to development was much greater. This is especially so in developing countries when one has to tackle staggering problems of population, food, health, unemployment and poverty (J.P. Naik).

d) *Free Education versus Non-subsidised Education*

Free education alone can reach the poor. But there are severe constraints in our ability to provide free education to all children. Hence a policy of free education for the poor and first-generation learners, heavily subsidised education at the higher levels and self-supporting education for those who can afford may be adopted by developing countries. Free education should not deteriorate into substandard education and the existence of the public schools should not be allowed to perpetuate social inequality. There may be differential pricing for education, but it is unreasonable to keep good education beyond the reach of the poor.

Economics of Education in the Indian Context

Even after four decades of Independence India is a country besieged with the problems of population growth, low literacy rate, rising unemployment rate and ever-widening gap between the rich and the poor. Massive investment, judicious planning and concerted effort by the State and the people are necessary to wipe out illiteracy from the country. Without minimum physical facilities and competent teachers educational standards cannot be maintained, much less improved. The Fifth All India Educational Survey (1986) does not present a rosy picture about physical facilities available in schools. Even essential physical facilities are not available in many schools. Eleven per cent of primary schools and two per cent of middle schools have no buildings. Forty-two per cent of primary schools and twenty-six per cent of middle schools and thirty-three per cent of middle schools are not provided with drinking water. Eighty-five per cent of the primary schools and fifty-nine per cent of the middle schools have no urinals. Ninety-four per cent of the primary schools and eighty per cent of the middle schools have no lavatories. The magnitude of the problem requires judicious selection of priorities and fair distribution of the limited resources to ensure maximum efficiency.

Evaluation

1. Distinguish between 'Economics and Education' and 'Economics of Education'.
2. How does a study of economics of education help the teacher?
3. State the limitations of economic analysis of education.
4. What are the similarities and differences between education and industry?
5. Do you consider education as an investment? Justify your view.

EDUCATION AND ECONOMIC GROWTH

Education as Prime Mover

Education and the development of a country are interrelated and interconnected. "There is little progress without education; there is little education with poverty." All developed countries have high rates of literacy, with a few exceptions. Countries which are educationally advanced enjoy better standards of living.

Education is a major factor in economic growth, not the sole factor. The middle east countries are rich without a high percentage of literacy, mainly due to the oil wealth. Kerala is the most literate state in India but its per capita income is not the highest. Strategic location makes some countries affluent as in the case of Singapore.

M' Bow had rightly pointed out:

Education should be regarded as a prime factor in development not only because it provides the means of training the national leaders and specialists who are essential in the conditions of present day technology but also because it is an essential element in enabling a nation's people to arrive at a better appreciation of their situation and of the constraints to which they are subject so that they may more successfully take charge of their own destiny.

The Indian Education Commission (1966) was fully aware of the need to make education growth-oriented and its report was titled 'Education and National Development'.

The report says: "In a world based on science and technology, it is education that determines the level of prosperity, welfare and security of the people. On the quality and number of people passing out of our schools and colleges will depend on success in the great enterprise of national reconstruction whose principle objective is to raise the standard of living of our people."

Education influences economic development. It alters the attitude to work, consumption preferences, saving propensities, economic rationality, adaptability, innovativeness, flexibility, attitude towards family size and various social attitudes relevant from the economic point of view (Kothari and Panchmukhi).

In India, the green revolution success of operation flood and steady improvement in the productivity of the workers are traceable to expansion of rural literacy. The impact of education in India can be estimated from select data.

Table 1: Literacy Level and Per Capita Income of Select States (1984-85)

State	Literacy (Percentage)	Per Capita Income (Rs.)
Kerala	69.17	2196
Maharashtra	47.37	3232
Tamil Nadu	45.78	2070
Punjab	40.74	3935

Indicators of Economic Growth

- i) Gross National Product/Gross Domestic Product
- ii) Per Capita income
- iii) National income
- iv) People below poverty line
- v) Monetary and fiscal policies
- vi) Number of unemployed youth
- vii) Self-sufficiency in basic goods
- viii) Trade surplus
- ix) Rate of inflation

Indicators of Educational Development

- i) Literacy percentage
- ii) Dropout and retention rate
- iii) Enrolment of children in various age groups
- iv) Contribution to the world of knowledge
- v) Emergence of eminent personalities
- vi) Social relevance and secular character of education
- vii) Technical and scientific manpower
- viii) System of examination and certification

- ix) Morale of the teaching profession

Classification of Countries

Countries are usually divided into four categories depending upon their level of development. They are

- i) Under-developed countries
- ii) Developing countries
- iii) Semi-advanced countries
- iv) Advanced countries

Many countries in Africa are under-developed. India is one of the developing countries of the world. Majority of European countries are semi-advanced. USA, USSR, UK and Japan are examples of advanced countries.

Characteristics of Under-development

One-third of the human race live in 100 under-developed countries. Their population increases at 3 per cent per annum while their real per capita income increases at the rate of 1 per cent only. They share the following characteristics:

- i) Heavy dependence on agriculture
- ii) Scarcity of capital
- iii) Low literacy level
- iv) High rate of unemployment
- v) Undeveloped legal, social, political and educational system
- vi) Unutilised or under-developed natural and human resources
- vii) Use of primitive technology
- viii) Unwillingness to break with tradition
- ix) High birth rate.

Status of Education in Under-developed Countries

Under-developed countries provide less educational opportunities to rural children. Educational costs are rising without corresponding rise in educational standards. Dropout and retention rates are high. Education is not related to real life situations. It is not an equaliser, but acts as a stabiliser and promoter of social inequalities (Samuel Bowles). Education is not linked to productivity and is not backed by a sound philosophy.

Signs of Development

A developing economy is characterised by increase in capital resources, improvement in the efficiency of labour, better organisation of production in all spheres, development of means of transport and communication, growth of banks and other financial institutions, urbanisation and a rise in the level of living, improvements in the standards of education and expectation of life, greater leisure and more recreational facilities and the widening of the mental horizon of the people. In short, economic development must break the barrier or the vicious circle and bring into being a self-generating economy so that economic growth becomes self-sustained (Prof. Nurkse).

Stages in Educational Development

Nations have to pass through several stages in educational development. Madam Beeby had listed four stages which are given below:

a) *Dame School Stage*

It is more or less a single teacher home-school. The teacher was poorly educated and had no professional education. Rote learning was the popular method. Only rudiments of a few subjects were taught. Literacy and rote-learning were the major components.

b) *Stage of Formalism*

In this stage the state entered the educational scene. The teacher's educational level continued to be low, but some professional training was given to him. Departments of education came into existence and teachers were assured of their salaries. Inspection of schools, conduct of examinations, elaborate rules and regulations, prescription of textbooks etc. were imposed upon recognised schools.

c) *Stage of Transition*

It is a stock-taking stage. Countries try to modernise their education systems and national policies are evolved. Innovations and research in education are encouraged. There will be better status and more freedom to teachers.

d) *Stage of Meaning*

Educational institutions enjoy autonomy. Teachers will be self-disciplined and professionally mature. Teachers will be proud of their profession and there will be full academic freedom. There will be flexibility in educational practices to enhance healthy competition.

Stages in Economic Development

W.W. Rostow has traced the economic growth of countries through five stages on the analogy of aerodynamics.

(a) Traditional Stage or Handicraft Stage

Primitive societies depend upon manpower and animal power for production. Tools used are primitive and production is mainly for local consumption.

(b) Pre-take-off Stage

In this stage the necessary infrastructure for development will be created. Transport and communication will be improved. Electricity and light machines will be used in agriculture and industry. Modern institutions such as elected bodies, codification of laws, banking and transport systems will take root.

(c) Take-off Stage

Now the economy is poised for growth. It will become self-sufficient and self-reliant in many aspects. It will enter the international market. Population growth will be checked and national income will increase. India had already reached this stage at the end of the Fourth Five Year Plan.

(d) Drive to Maturity

The economy goes in for machine building, space research, eradication of poverty and sophisticated machinery. Society becomes affluent and social and economic institutions get modernised. A high standard of living is achieved with emphasis on conspicuous consumption. Many advanced countries are at this stage.

(e) High Mass consumption

It is a dream world. There is abundance of everything to everyone. People will enjoy all material comforts and even luxuries are for the asking. Only some sections of people in USA and Japan enjoy such affluence.

The above stages are the transit points in a nation's economic progress. But we should note that economic prosperity does not automatically ensure a happy life.

Economic Growth—Wide Disparities

There is significant difference in the per capita income of the advanced

countries and the other countries. There is close correlation between educational development and per capita income.

Table 2: Literacy and Per Capita Income

Country	Adult Literacy Rate-Percent (1977)	Per capita income-R.S. (1980)
USSR	100	4550
USA	99	11360
Japan	99	9890
India	36	240

Source: World Bank report—1982.

There is a vicious circle of population—poverty—illiteracy. Unless we take timely and effective action the future of our country will not be bright.

Let us have a look at this syndrome in India.

Table 3: Population—Income—Literacy Rate in India

Year	Population (in crores)	National Income (Rupees in Crores)	Per Capita Income (Rupees)	Literacy Rate (Percentage)
Current Prices				
1950-51	36	8,812	246	17
1960-61	44	13,263	306	24
1970-71	55	34,235	633	29
1980-81	68	1,10,484	1627	36
1987-88	80	2,57,813	3284	40
(approximate)				(approximate)

Indian Economy—A profile of progress, Government of India, 1989.

Research Findings

A. Studies by Dension

E.F. Dension used the residual factor approach to find out the contribution of education to economic growth in the United States of America by using the Cobb Douglas Production Function. He separated the contribution of the factors of production (land, labour, capital) and arrived at the residual factor for the period 1927 to 1957. Average growth rate was 2.93 per cent and the residue was 2.01 per cent (roughly two-thirds) attributed to advance in knowledge.

Dension was also interested in finding out the impact of educational qualification on the salary of workers in the organised sector. He found, in the long run, mean educational qualifications were steadily rising. In 1910 only 5.9 per cent of the workers had studied up to XII Std., and in 1960 it rose to 21.2 per cent. Salary increase was more than proportionate to additional duration of study.

Table 4: Correlation between Educational Qualification and Salary

Educational Qualification (By Standard)	Monthly income (in Dollars)	Differential (in Dollars)
No Education	50	-
Up to IV Std	65	+15
Up to VIII Std (Mean)	100	+35
Up to XII Std	140	+40
Up to XVI Std (Higher Education)	235	+95

Dension concluded: (i) from 1929 to 1957 the amount of education the average worker had received was increasing by almost two per cent a year and this was raising the average quality of labour by 0.97 per cent a year and contributed 0.67 percentage points to the growth rate of real national income. Thus it was the source of twenty three per cent of the growth of real national income per person employed and (ii) additional education contributed only a little more than half as much growth between 1909 and 1929 as between 1929 and 1957.

In another study covering the period 1960-80, he calculated an increase of 3.3 per cent per annum in the national income of USA. He worked out the contribution of education (without taking into account research and development) at eighteen per cent.

Bowman and Anderson (1950) compared the literacy rate with the per capita income of 83 countries. Tabulated data is given below.

Table 5: Distribution of Sample

Classification	Literacy Level	G.N.P. (Dollars)
32 poor countries	Below 40%	Under 300
24 rich countries	Above 70%	Above 700
27 middle level countries	40 to 69%	Not very definite

The obvious inference is that forty per cent literacy is the absolute minimum to cross the economic barrier. They also found that literacy followed the industrial revolution in England, whereas in developing countries literacy was instrumental for industrial revolution.

Kaser undertook a study of twelve industrial countries for the period 1850 to 1950. He correlated the GNP of those countries with the following factors:

- (i) enrolment rates at primary/secondary/college levels.
- (ii) the ratio of students at the primary level with those at secondary and higher education level.
- (iii) pupil-teacher ratio.
- (iv) total cost per student for the three levels and the proportion of GNP spent on teachers' salary.

His major findings are:

- (i) enrolment during a particular year affects GNP in the next decade, and
- (ii) no correlation among per capita pupil cost, teachers' salary and GNP.

Hector Correa assigned 5.3 per cent of GNP to increments in education of the labour force between 1909 and 1949 in USA on the basis of his study of 193 industries.

Bennet (1960) tried to correlate the effects of vocational education on GNP. He collected data from 19 countries and his analysis showed that vocational education had positive and high correlation with economic growth in developing countries, whereas in countries with more than 500 dollars as per capita income the correlation was not significant.

The Government of Netherlands initiated a study in 1957 to find out the comparative yield of secondary education and higher education. The study showed, to realise one per cent increase in national income an investment of 0.655 in secondary education was adequate while it was 1.038 per cent in the case of higher education.

Mc Clelland's Model

Mc Clelland (1966) gave a model for integrating education with economic development. He selected twenty-eight countries and collected economic and educational data. He adopted a novel method to classify countries on the basis of consumption of electricity from 1952 to 1958.

Electricity is a symbol of progress and as it cannot be stored it is ideal for accounting purposes. His inference was that the economic growth over the years 1952-1958 was influenced by the amount of secondary education in 1930. He developed the concept of educational stock and recommended a minimum of twenty matriculates and two graduates for a population of one thousand. Wherever education was combined with achievement motivation the economic growth was rapid.

Schultz (1963) calculated the educational stock in Japan in the year 1960 as eighteen per cent. Thanks to the increase in educational capital from 1930 to 1955, its contribution was twenty-five per cent of the national income.

Indian Studies

A few studies had been conducted in India in this area. More studies are needed to assess the contribution of education by levels to the prosperity of India.

Dr. V.K.R.V. Rao (1966) in his Delhi Study found income differentials between persons with different levels of education and also between technical and non-technical personnel. He advanced the concept of the Response Ratio of the Human Factor to account for the higher productivity due to education.

J.G.B. Tilak (1984) attributes around one-third of India's economic growth to the spread of education.

It is common knowledge that people with better qualifications are paid more even if the job does not call for higher qualification. Academic qualifications influence the pay structure in the organised sector. Panchmukhi worked out the mean income of salary earners in Bombay city.

Table 6: Level of Education and Annual Income 1970-71 (India)

Level of Education	Income before tax (in Rs.)
No formal education	2900
Up to primary education	3100
Up to secondary education	3500
Up to higher secondary	5500
Graduates and above	8200

Age Earning Profile

Earnings depend upon a person's age, educational qualifications and experience. Age earning profiles are compiled on cross sectional data and life time earnings for different categories are worked out by many countries. Blaug (1961), Nalla Gounden (1978) and several National Sample Surveys had attempted to generate data regarding age—qualification—earnings specifics.

Age earning profiles indicate:

- (i) there is rise in earnings up to the middle forties and then a slow decline.
- (ii) people with higher or special qualifications are given a better salary start.
- (iii) maximum earnings are reached by people with higher qualifications in the later phase of their career and terminal benefits are higher for this group.
- (iv) there is positive correlation between educational level and salary in the organised sector. (See fig. 1)

Conclusion

In the teaching profession also we find steep increase as we move up on the ladder.

Besides higher qualification, income differentials may also be due to inherited property (Pigou), skill differences (Becker), extent of collective bargaining (Marx) and the availability of special talents.

Evaluation

1. What are the economic and educational problems of developing countries?
2. Describe briefly the studies carried out by Denson in USA.
3. Explain the significance of Mc Clellands' Model of economic growth to India.
4. Explain the role of education in the economic development of India.
5. Outline a strategy for economic growth through education.
6. Write short notes on:
 - a) Take-off stage
 - b) Stage of meaning
 - c) National income
 - d) Educational stock.

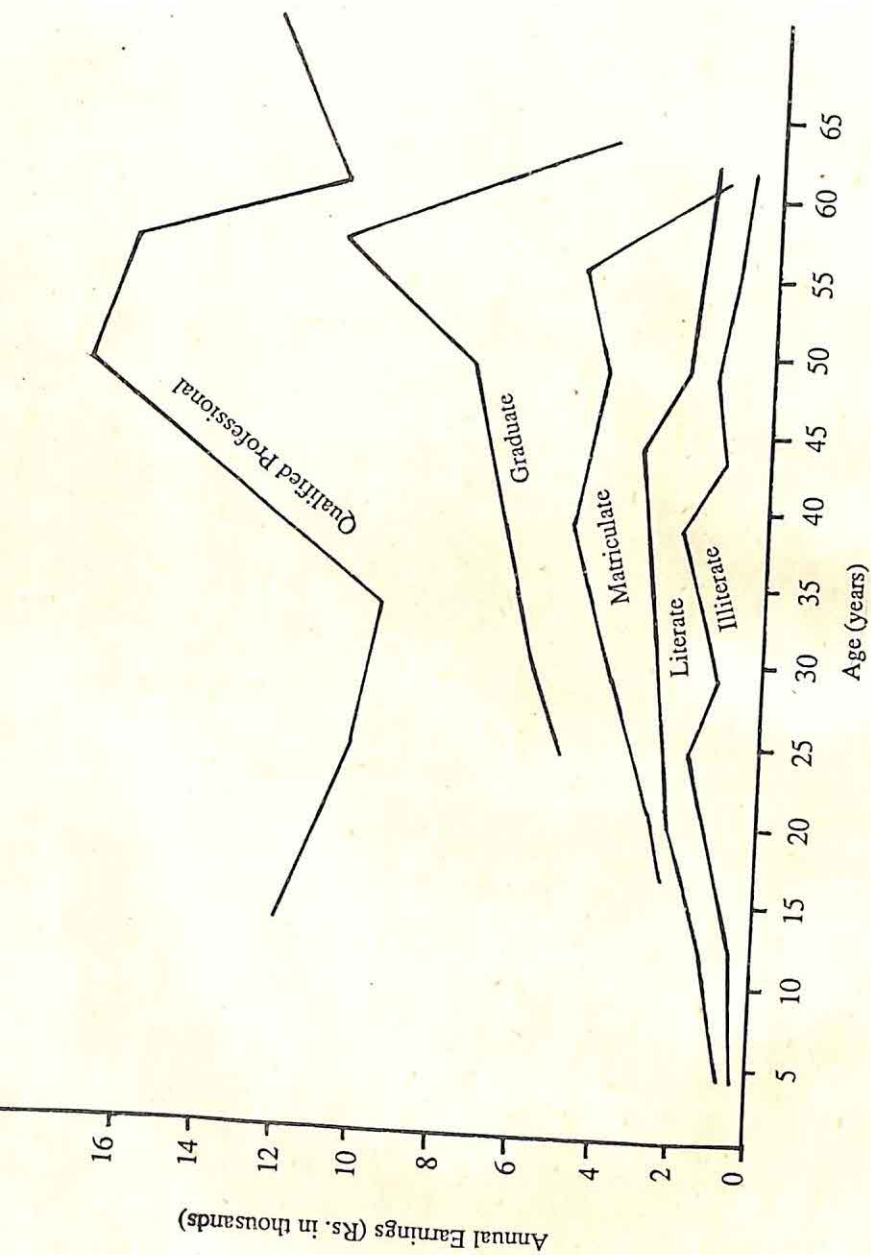


Figure 1: Average Age-earnings Profiles by Education Levels



HUMAN RESOURCE DEVELOPMENT

Previous Resource

There are natural resources, ocean resources and mineral resources. Man himself is a precious resource and the development of this resource has facilitated the harnessing of other resources. The human being is like an uncut diamond; to make it a gem a lot of education and training become necessary.

Human resource development is the process of increasing the knowledge, the skills and the capacities of all the people in a society (Harbison and Myers).

The human being as such is not a resource; it becomes a resource only if trained, developed and allocated to productive work (Peter Drucker).

Population

There is a spurt in the overall population of the world. It has registered a five-fold increase in less than one and a half century, and may reach 1,000 crores in another century.

Table 7: Growth of Population—Worldwide

Year	Population (in billions)
1850	1
1930	2
1987	5
2020	8
(anticipated)	(1 billion=1000 millions=100 crores)

Population is growing at an alarming rate in many Afro-Asian countries. In a few countries like France and Sweden the population is static. USSR wants to encourage larger families to meet the nation's manpower requirement. India's population is growing at the rate of 2.4

per cent per annum. Sex ratio is 935 females for 1,000 males, except in Kerala where the ratio is 1,030 : 1,000. The overall density of population is 221 per sq. km. Forty per cent of India's population is below the age of fifteen.

India's population has doubled in 35 years whereas it required 17 years for Kenya, 34 years for Brazil, 49 years for China and one hundred years for USA (National Geographic; February, 1989) to double.

Correlates of Human Resource Development

Human resource development is a complex process. Its components include health, education, youth welfare, social services, games and sports.

Health

The basic requirement of human welfare is food. Unfortunately one-third of our countrymen (described as people below poverty line) do not get even the absolute minimum quantity of food. During 1985-86 the average consumption of food in India was only 178 kg. Table 8 shows the low nutritional level of Indians.

Table 8: Food Supply (In International Units)

Country	Calories	Proteins	Fat
India	1971	48	29
USA	3504	104	166
USSR	3542	108	107
World Average	2568	69	62

Source: (FAO Year Book, 1976)

Infant mortality rate is high. It is 104 per thousand compared to 44 in China and 10 in USA. Due to improved health services longevity (life expectancy) had increased for 32 in 1951 to 56 in 1985. In the same period death rate had come down from 43 per thousand to 12 per thousand. India has launched the health for all by 2000 programme by expanding primary health care facilities.

Education and Skill Development

One-fourth of the world's illiterates live in India. About 64 per cent of Indians are illiterate. Illiteracy is very high among women (75%), scheduled castes (79%) and scheduled tribes (84%). Prior to independence rural India was educationally and culturally neglected.

Though we have introduced free and compulsory education and provided many incentives, the effective attendance is below, eighty per cent. Most of the schools are characterised by unattractive environments and unimaginative teaching. If we could make all children literate by 2000 A.D., it will be a great achievement.

Dropout rate is very high. Half the number of children enrolled in Std. I leave the school before reaching Std. V and only one-fifth of them reach Std. X. Failure rate is also high, mainly due to ineffective teaching. The content and quality of instruction has to be brought to international standards.

The magnitude of the problem of dropouts at the primary level can be judged by a glance at Table No. 9.

**Table 9: Interrelationship between Literacy Percentage
Percentage of Enrolment and Dropouts**

Sl. No.	Name of the State	Literacy percentage (1981)	Percentage of Enrolment in the age group 6-11	Dropout percentage from Classes I to V (1982-83)
1.	Kerala	70	100	3
2.	Orissa	34	87	50
3.	Bihar	26	79	68
4.	Uttar Pradesh	27	75	43

Source: (*Indian Planning Experience: A statistical profile*)

Education system was indifferent to the development of skills. The absence of modern skills was noted by the National Sample Survey (27th round). It was found only six per cent of them had learnt modern skills.

Non-Formal Education

Non-formal education is an alternative to formal education. It can be designed to cater to the needs of various groups.

- (a) National Literacy Mission is aimed to reach 130 million young illiterate adults before the end of 1995 and provide functional education. They will be given literacy, numeracy and awareness of their rights and responsibilities so that they be effective citizens of a democracy.

- (b) Worker education is provided for industrial workers by the department of labour and for agricultural workers by rural extension training centres. Modern methods of production, safety education, small savings and social education form part of these informal programme. This exposure will help in improving the productivity and health of the workers.
- (c) Distance education programmes are offered through correspondence courses backed with the mass media. Satellite Instructional Television Experiment, UGC Programmes telecast by Doordarshan and A.I.R. Programmes have made some impact in HRD.
- (d) Open schools are meant for school dropouts and they are helped to pass the school final examination. State Councils of Education Research and Training are doing some pioneering work in this direction.
- (e) Open universities provide higher education to all those who missed it at the proper age. By acquiring diplomas and degrees, people can move up in their profession and also update their knowledge. Indira Gandhi National Open University is a major step in this direction.

Non-formal education in all its forms will help in human resource development. It makes democracy meaningful to the people and acts as a great equaliser. Formal education has failed to bridge the gap between the classes (Samuel Bowles). Non-formal education makes people capable of contributing their best to the country. Vivekananda, Gandhiji and Lenin championed the cause of education of the poor.

Process of Human Resource Development

1. Providing opportunities to children to acquire and sharpen the capabilities needed for their present and future lives.
2. Helping them to discover their capabilities and innate potentials and use them for their personal and social benefits.
3. Promoting an institutional culture which will emphasise cooperation and team work, motivation, positive attitudes to the world of work and an egalitarian society.

Reisman's model for human resource development for developing countries.

1. Minimum educational qualifications and job training are adequate for entry level positions.

2. Provide employees on the job training, higher education and work site courses to enable them to get higher education and better skills.
3. Career mobility should be assured for persons who can shoulder higher responsibilities.
4. Part-time courses (summer courses included) should be integrated with job experience and employees should be enabled to get diplomas and degrees.

Harbison-Myers Study

Harbison and Myers (1964) worked out a composite index of human resource development on the basis of educational indicators, gross national product and percentage of population engaged in agriculture.

It covered 75 countries as shown below:

Undeveloped	-	17	Countries
Partially advanced	-	21	"
Semi-advanced	-	21	"
Advanced	-	16	"

Indicators of Human Resource Development

Harbison and Myers collected data regarding the undermentioned items.

A. Education

1. Number of teachers (first and second levels per 10,000 in the population.
2. Engineers and scientists per 10,000.
3. Physicians and dentists per 10,000.
4. Pupils enrolled at first level (primary) education as a percentage of the estimated population in that age group.
5. The adjusted school enrolment ratios for first level and second level combined.
6. Pupils enrolled at second level as a percentage of the estimated population in that age group adjusted for length of schooling.
7. Enrolment in the third level education as a percentage in that age group.

B. Economy

1. Gross national product of the country.
2. Percentage of people actively involved in agriculture related occupations.

The composite indices of a few countries are given below.

Table 10: Human Resource Development Index

Country	Level	Per Capita Annual Income (Dollars)	HRD Index
1. Afghanistan	I	50	1.9
2. Sudan	I	60	7.55
3. Pakistan	II	70	25.2
4. Burma	II	57	14.2
5. India	III	73	35.2
6. Norway	III	1130	73.8
7. USSR	IV	600	92.9
8. USA	IV	2577	261.3

Findings of the Study

The study found the following overall correlation coefficients between GNP and the educational development for the 75 countries.

	(Dollars)	
1. First level education and GNP	0.668	
2. Second level education and GNP	0.817	
3. Third level education and GNP	0.735	
4. Composite index of HRD and PC	1.000	
	<i>C.I.</i>	<i>P.C.I.</i>
i) Countries in level I (Mean)	3.2	84
ii) Countries in level II (Mean)	21	182
iii) Countries in level III (Mean)	50	380
iv) Countries in level IV (Mean)	115	1100
5. HRD Index and GNP in agricultural countries.	0.814	
6. Public expenditure on education as percentage of national income and HRD	Not significant	
7. Correlation of high level manpower with GNP		
i) Teachers	0.755	
ii) Physicians and dentists	0.700	
iii) Engineers and scientists	0.833	

Strategies for human resource development for countries under level I (underdeveloped)

- (a) Gradually replace foreign workers by local talents from the lower levels.
- (b) Utilise the services of foreign firms in training local persons in high level technology.
- (c) Salary for such apprentices may be lower than that of foreign experts.
- (d) Expansion of secondary education should be given priority over universal primary and high education.
- (e) Concentration of vocational or craft education at secondary stage may be unwise and costly.
- (f) Teacher education should be of high quality.
- (g) Send students abroad for quality higher education.

Strategies for human resource development for countries under level II (partially developed)

- (a) Give priority to secondary education.
- (b) Secondary education may be provided free to all able students.
- (c) Start multipurpose secondary schools.
- (d) At the higher level, agricultural, scientific and engineering education may be given more importance.
- (e) Improve the status and salary of scientists and engineers.
- (f) Sub-professional groups like secondary school teachers, nurses and clinical assistants should be helped in their professional advancement through part-time courses.
- (g) Primary education should be enriched with the help of educational technology.
- (h) Encourage public contribution for providing infrastructural facilities like school buildings.
- (i) Non-formal education should receive as much attention as formal education.
- (j) Employing agencies, including the army, may be involved in training skilled manpower.

Strategies for human resource development for level III countries (semi-advanced)

- (i) Rapid industrialisation using indigenous technology.
- (ii) Application of modern research methods for the improvement of agriculture.

- (iii) Check population growth.
- (iv) Improve economic efficiency and reduce dependence on foreign exchange.
- (v) Universal primary education and good secondary education should be provided.
- (iv) Science and engineering education, though expensive, may be encouraged.
- (vii) Higher education should be directed to produce highly talented manpower.
- (viii) Research institutes for science and technology should receive priority.
- (ix) Balance between mass employment and labour-saving techniques should be evolved.
- (x) Secondary education should be made more effective with appropriate teaching technology.
- (xi) Establish vocational and adult education centres for young adults.
- (xii) For employees, on the job training programmes should be established.
- (xiii) Improve the competence of school teachers and reduce dropout rate.
- (xiv) Administrative officers should be carefully selected and properly trained.

Strategies for human resource development for level IV countries (advanced countries)

- (a) High level experts should be utilised to a greater extent to retain the country's commanding position and prosperity.
- (b) Anticipate structural unemployment in some industries due to break-through in technology.
- (c) Be prepared to meet demands for higher education and specialised training.
- (d) There will be increasing demand for technocrats.
- (e) High level manpower may not be fully utilised.
- (f) Labour force should be made highly competent to speed up economic growth.
- (g) New technologies of teaching will be required to ensure occupational flexibility.
- (h) Secondary school dropouts may become social menaces. Counselling and guidance services should be provided to help them.

- (i) More money will have to be spent on higher education. Scholarships for needy students will become necessary.
- (j) There will be more demand for teachers at higher levels.
- (k) Non-formal education will be in demand to keep up with the fast changing technologies.
- (l) Executives of multinational corporations have to be familiarised with high technology and resource management.

Population explosion should be checked. At the same time every effort should be made to develop and use the latent talents of the people for national prosperity.

Evaluation

1. Define the concept of Human Resource Development.
2. Discuss the role of non-formal education in human resource development.
3. Describe the study carried out by Harbison and Myers about human resource development.
4. Suggest suitable strategies for human resource development in India.
5. Explain the role of secondary education in human resource development.

MANPOWER PLANNING

Linking Education with Economy

There is an imbalance between demand for trained labour and the supply of such labour, resulting in dislocations in the economy and hindering economic growth. It seems to be a sound policy to plan the output of educational institutions to cater to the actual needs of the employing agencies so that there will be neither unemployed persons nor vacant posts. Manpower planning could be successfully implemented in communist countries where there is centralised planning and little personal freedom. In democratic countries there is more freedom of choice and the private sector enjoys a respectable place.

Strategy for Linkage

A strategy for manpower planning has the following components.

- (i) Providing appropriate incentives to employers and educational decision makers.
- (ii) Training of skilled manpower to meet modernisation in various sectors.
- (iii) Restructuring formal education with essential knowledge, skills and attitudes to enable the students to fit into the world of work.

Limitations of Manpower Planning

The very concept of manpower planning arises from considering education as an industry. There are surpluses in manpower in many areas and shortages in a few sectors due to faulty planning in the past. The present trend may not continue in the future also, in the context of changes in technology and labour saving devices. The essentially human character of education should not be reduced to mere placement schedule.

Manpower Forecasting

We know the trends of growth in population and in various sectors of the economy. We can work out projections for the future assuming the

present rate of growth to continue, or by slightly modifying the growth rate with the use of computers.

Short-term projections are likely to be more accurate than long-term ones. Forecast may focus on technical manpower needs of the next decade or the needs of the economy in specified areas of shortage.

Essential Features of Manpower Forecasting

- (a) Complete and reliable data
- (b) Practicable targets of growth
- (c) Realistic approach in planning
- (d) Correct appraisal of trends
- (e) Cooperation of the people.

Techniques of Manpower Forecasting

Manpower planning is adopted in a smaller or bigger way in democratic and socialist countries with different techniques.

A. Parnes Technique

Parnes had outlined a technique which was successfully implemented by six Mediterranean countries (Italy, Portugal, Spain, Greece, Turkey and Yugoslavia) during 1961-1975. This was called Mediterranean Regional Project (MRP) and OECD helped in its implementation.

Suggested technique

1. Choose a base year and collect reliable data.
2. Select a target year and fix targets of growth for all the sectors.
3. Multiply present sectoral outputs by labour coefficients.
4. Project the number of educated people required to reach the target.
5. Find out the needed manpower under various classifications and categories for each sector.
6. Convert the anticipated growth rate and manpower requirements into flow charts.
7. Estimate the manpower needs of the immediate future (yearwise) by taking into account the presently available manpower, giving some allowance for failures, dropouts, death, migration and immigration of labour and women who may not opt for jobs after marriage.
8. Arrive at the pattern of manpower requirement for each sector and level.

9. Frame an enrolment policy taking into account:

- (i) the duration of each course
- (ii) role of non-formal education
- (iii) possible shifts in the consumer market and
- (iv) transition from one level to another.

B. Educational Investment and Planning

This method was developed and used by Ireland and Netherlands during 1971-76.

The Strategy included:

- (i) Detailed picture of present structure of unemployment.
- (ii) Migration to and immigration from other countries by skilled and unskilled workers.
- (iii) Locating areas of manpower shortage as well as surplus.
- (iv) Applying correction factors on the basis of technical innovations.
- (v) Indicating likely demand for manpower in technical and professional areas.

EIP had less detailed process and forecasts than MRP. General educational needs of all people are to be met fully without linking it with the job market.

Approaches to Manpower Planning

A. Employer Opinion Method

This method is followed in England and France. The probable manpower requirements under various levels are collected from companies and industries and tabulated. Educational planning is based on these calculations.

It is impractical in agricultural countries with numerous small holdings and large number of small scale industries.

B. Density Ratio Method

This method is followed in socialist countries like USSR. For each and every sector the optimum need is visualised and the geographical distribution is distributed. Every district will be provided with educational facilities as stated in the scale, thereby ensuring just distribution of available resources.

As the density of population is uneven in any country, the distance to be covered to reach the nearest institutions will vary to a great extent.

C. Incremental Labour Output Ratio

ILOR assumes that the average labour output is steadily increasing due to education, training facilities, improved techniques and capital intensive methods. The future pattern of work force is calculated on the basis of time series analysis and linear output trends, which point to the employment of lesser number of people to accomplish a task than at present. Scandinavian countries make use of this method.

D. International Comparison Method

Comparison of productivity in several countries will help a country to prepare a model for manpower utilisation.

There are also differences in the climate, attitude towards life and general health among the countries. For example, an average Japanese works for 2,180 hours in a year, while an American works for 1,934 hours and an Englishman 1,941 hours. Imitation may not produce the desired results always.

The Indian Education Commission (1966) was influenced by Western educational models.

Criticism of Manpower Planning

1. There is as yet no reasonable way to estimate future changes in productivity, making the process of forecasting future occupational structure difficult.
2. There is little verified data about the amount and type of education required to carry out a particular occupational assignment. Single estimates of future needs for persons with a given type of schooling are subject to extreme error.
3. Manpower analysts give little attention to the substitution of one type of labour or professional skill by another or substitute between two types of physical capital and labour. In the real world one would expect different types of labour to influence wage and salary levels. People take decisions on the basis of monetary returns and status attached to a job. Opportunity cost influences job preferences (Hollister).
4. Job satisfaction is a higher order need. In manpower planning allocation of jobs is done mechanically.

5. Mark Blaug terms manpower planning as a romantic tale—more myth than reality.
6. Rado and Jolly ridicule manpower planning as a bastard child of economics.
7. Iver Berg calls the whole exercise of MPP as 'the great training robbery'.

Manpower Planning in India

Higher education is becoming more responsive to the job market. Technocrats are appointed as Vice Chancellors of universities and leading experts in agriculture and industry are included in boards of studies. Job oriented degree courses are offered, while non-utility courses are discouraged.

At the higher secondary level the vocational courses need encouragement and our secondary school curriculum is likely to be vocationalised under the National Policy on Education (1986).

Primary and middle schools are expected to teach socially useful productive work (SUPW) to all children.

As yet there is no comprehensive strategy towards a rational planning of manpower needs. The fact that the Seventh Five Year Plan (1985-90) gives priority to manpower utilisation marks a new beginning.

Evaluation

1. Discuss the need for manpower planning.
2. Explain the merits and limitations of manpower planning.
3. Describe the procedure adopted in the Mediterranean Regional Project for manpower planning.
4. Suggest suitable steps to link higher education with the national economy.
5. Evaluate the Parnes Technique for manpower planning and examine its suitability to India.

EDUCATION AND EMPLOYMENT

Unemployment

One of the serious problems of India is unemployment. It is not a mere economic problem; it gives rise to social tensions, student unrest and political upheaval. Creation of jobs is unable to keep pace with population growth. Industrial growth is sluggish and automation and mechanisation have reduced job opportunities.

The Seventh Five Year Plan (1985-1990) envisages an increase of four per cent per annum in employment potential. The magnitude of the problem is great as many as thirty million persons were in the job seekers list in 741 employment exchanges in the country. Roughly half of them were educated.

The economy is unable to absorb the output of higher education. While many are unemployed there are some who lose their jobs temporarily due to changes in technology, fashion and taste. Agriculture-based industries offer only seasonal employment. Some people pretend they are very busy, to disguise their unemployed state.

Craze for white collar jobs, particularly government services, should go. Self-employment is a good alternative. Skills and attitude necessary to start one's own enterprise and dignity of labour should be made part of the curriculum.

Employment Potential

Some industries offer more jobs for educated persons. We call them labour intensive projects.

Table 11: Employment Coefficients
(Investment: Rs. one lakh)

1. Electronics	9.5
2. Storage Batteries	6.1
3. Tractors	5.4
4. Heavy electrical equipment	5.2
5. Commercial vehicles	5.2
6. Agricultural implements	5.0
7. Paper and Boards	0.6
8. Fertilizers	0.3

Source: P.K. Bose (1981)

Schemes for Unemployed Graduates

Job seekers are helped by the nationalised banks to start small scale industries. Schemes like NASSEY, SEEUY are patronised by the government. J.M. Keynes advocated massive government spending to accelerate employment and economic recovery. But in developing countries unrestrained and unproductive spending will increase inflationary pressures and national debt.

In some states unemployed graduates are given some allowance. In the absence of social insurance scheme, the ideal way is to use these young persons in social and adult education projects. (vide Table No. 12)

Brain Drain

A recent phenomenon in India is the flight of talents from the country. Scientists, engineers and doctors lured by the opportunities available in the advanced countries to pursue higher research, acquire fame and earn a lot are eager to go abroad. USA, Canada and Germany take away some of the best brains nurtured at our cost. We may feel proud of the great Indians who had distinguished themselves in the new countries, but the sad fact remains that we have failed to spot talent, recognise it and reward it. Seeking jobs outside the country eases unemployment position here; but social losses and impact on overall development are difficult to calculate.

National Policy on Education (1986)

A beginning will be made in delinking degrees from jobs in selected areas.

The proposal cannot be applied to occupation-specific courses like engineering, medicine, law, teaching etc. Similarly, the services of

Table 12

Education Specific Percentage of Unemployed (15 years and above) According to Usual Status Excluding Workers in the Subsidiary Status (Adjusted)

	Not Literate	Literate and up to Primary	Middle	Secondary	Graduate and above	All
Urban Males	1.42	3.10	5.61	5.77	5.76	4.11
Urban Females	0.12	0.50	1.84	3.74	6.30	1.20
Rural Males	0.24	0.90	2.83	5.14	7.46	1.23
Rural Females	0.07	0.27	2.02	6.68	13.31	0.35

Source: National Sample Survey 38th Round, June 1987

specialists with academic qualifications in the humanities, social sciences, sciences etc. will be required in various job positions.

Delinking will be applied in services for which a university degree need not be a necessary qualification. Its implementation will lead to a refashioning of job-specific courses and afford greater justice to those candidates who, despite being equipped for a given job, are unable to get it because of an unnecessary preference for graduate candidates.

Concomitant with delinking, an appropriate machinery, such as National Testing Service will be established, in appropriate phases to conduct tests on a voluntary basis to determine the suitability of candidates for specified jobs and to pave the way for the emergence of norms of comparable competence across the nation.

The Future

During the preceding decade, interest centred mainly on quantitative norms, on training professional and executive personnel and establishing administrative structures. But this present decade will probably be preoccupied with the already dramatic problems of unemployment and by the need to change social structures. Economic development has no meaning unless it results in abolition of privileges and more justice for all mankind.

(Unesco: *Learning to be*)

Evaluation

1. List the major causes of unemployment in India.
2. Write short notes on.
 - i) Education for self-employment
 - ii) Brain drain
 - iii) Delinking degrees from jobs.

COST OF EDUCATION

Educational Costs

Cost analysis is an integral part of business management. If education is assumed as a production process, cost analysis will help in the assessment of allocative efficiency and distributive efficiency of educational expenditure. Cost analysis paves the way for cost control.

Educational cost has three components: i) social cost ii) private cost and iii) opportunity cost.

- i) Social cost includes non-recurring costs like investments in buildings and equipment; recurring costs on teachers' salary, scholarships, maintenance charges etc.
- ii) Opportunity cost represents the possible earnings through work which a student has to forego by attending school. Income foregone is sought to be compensated by ancillary services to the poor students.

Classification of Benefits and Costs

A. Internal Benefits to the Students

- (i) Additional financial return
- (ii) Option return—option to go in for higher education and reap financial returns
- (iii) Non-monetary opportunities like perquisites
- (iv) Hedging option—survival from technological changes
- (v) Non-market benefits like awareness and skill in social and economic life.

B. External Benefits

- (i) Residence related—benefits go to family members and neighbours.

- (ii) Employment related—an educated worker influences his colleagues.
- (iii) Society related—society enjoys better institutions and behaviour patterns.

Measurement of Benefits

- | | |
|---|--|
| a) Social rate of return | i) Spillover benefits to society |
| | ii) Intergenerational benefits (social function). |
| b) Intangible benefits | iii) discovering and cultivating talent. |
| | iv) occupational flexibility of the labour force. |
| | v) conducive environment to stimulate research. |
| | vi) Betterment of the law and order system. |
| c) Important but elusive of measurement | vii) Strengthening the democratic system. |
| | viii) Promotion of culture and humanitarian outlook. |
| | ix) Productive use and enjoyment of leisure. |

Unit Cost

Average expenditure from all sources per student is called the unit cost. The unit may also be an institution, section or course.

Unit costs are needed by educationists:

- i) to work out financial allocations and costing of educational schemes,
- ii) to study the efficiency level of an institution,
- iii) to improve the optimum utilisation of resources, and
- iv) to evaluate the input-output design.

Unit costs help the planners to compare the economic efficiency of an institution over a period of time, with institutions under other types of managements and with institutions in other states.

Formula for Unit Cost

$$UC = \frac{(T+A+Q+M+J)}{N}$$

Notations:

UC	=	Unit cost of education
T	=	Salary of teaching staff
A	=	Salary of non-teaching staff
Q	=	Equipment cost
M	=	Miscellaneous expenditure
J	=	Expenditure on co-curricular activities
N	=	Total number of students.

Table 13: Estimates of Unit Cost (In Rupees)

	S.C. Goel (1975)	Government of India (1980-81)
Primary education	137	160
Middle school	188	-
Secondary education	676	795
Arts and science degree	1638	1539
Post-graduate courses	2937	-
Technical education		5527

Benefits of Education

There are direct and indirect benefits from educational spending. Direct benefits include higher income, better status and cultural refinement, which usually go to individuals.

Education improves the social and cultural level of the people, eases communal tensions and promotes democratic values. There will be increase in productivity and social change.

Vaizey had outlined the steps in cost-benefit analysis.

1. Estimate costs contributed by different sources.
2. Prepare a time frame to expect the benefits.
3. List the anticipated direct and indirect benefits.
4. Estimate realised benefits at constant prices.
5. Work out cost benefit ratio.

Creation of promotion posts, in service education and scholarships benefit the individuals more and only less to the society.

Cost-effectiveness Analysis

Effectiveness of cost should be determined by the extent of successful completion of the stated objectives. Opening of more primary schools, appointment of more teachers and provision of free lunch scheme are aimed at eradication of illiteracy among children. If this objective is not achieved the cost incurred cannot be termed as effective, though it had benefited many people. Cost-effectiveness analysis is result oriented and anticipates total achievement of objectives.

Mark Blaug had outlined the steps in cost-effectiveness analysis.

1. Objectives of the scheme/project should be stated in operational (measurable) terms.
2. Optimum input mix should be calculated to reduce cost.
3. Each objective should be analysed in detail and due priority should be given.
4. Objectives should be rearranged on the basis of the weights given to them.
5. Objectives should be achieved through the economic utilisation of resources.
6. Evaluate achievement of each and every objective.

Cost Analysis: A Criticism

Cost benefit analysis is subjected to criticism, specially the methods employed. Woodhall (1970) raises the following objections:

1. Earning differentials reflects differences in the natural ability, motivation, social background, sex, occupation, non-formal education etc. of workers, as well as differences of education, so that earning differentials cannot be used as measure of the pure benefits of education.
2. Earning differentials do not adequately measure differences in the productivity of workers because of imperfections in the labour market, so that differences in earnings do not provide a measure of the direct economic benefits of education.
3. Besides these direct benefits, education generates indirect or spillover benefits which means education is likely to raise the productivity of people other than the educated worker himself, and

these benefits are not shown up in earning differentials nor are non-economic benefits reflected in earnings differentials.

4. Rate of return calculations assume full employment of educated workers, whereas many developing countries are experiencing unemployment of graduates and secondary school leavers.
5. Age earning profiles, drawn from cross-section data, which provide the basis for the rate of return calculations, reflect the present and past demand and supply conditions, whereas it is future demand and supply that concern the planners, thus rates of return is a poor tool in educational planning.
6. Private rates of return are meaningless because individuals do not make educational choices, as if they are making purely financial decisions.

Cost and Efficiency

Indicators of efficiency of an institution are:

- i) Percentage of successful candidates with distinction.
- ii) Unit costs at constant prices over a period of time.
- iii) Output of distinguished scholars.
- iv) Achievement in co-curricular activities.
- v) Rate of wastage and stagnation
- vi) Employability of students after course completion.

Though educational costs are escalating there is no great improvement in the efficiency of the education system of our country.

Evaluation

1. Explain the place of cost analysis in education.
2. How does unit cost help educational planners?
3. Distinguish between cost-benefit analysis and cost-effectiveness analysis.

INVESTMENT IN EDUCATION

Human Capital

Acquired and useful knowledge and skill may be termed as human capital. Good education is an important means towards the product of material wealth. The most valuable of all capital is that invested in man. Human capital can be developed through education, job training, medical facilities, public health, nutrition, housing and social services. Improvement of human capital leads to qualitative growth of manpower. Schultz considered high level manpower alone as human capital. J.S. Mill questioned the very concept and said wealth existed for the people and people should not be considered as wealth.

Life Cycle of Human Capital

The growth and decline of human capital falls into three categories.

Stage I: Gestation Period

In the first two decades of human capital formation, concentration will be on health, schooling and education in the wider sense. At this stage, calculation of opportunity cost (earnings foregone) is difficult and differs widely among the regions.

Stage II: Productive Period

The next three decades will be used in capital production due to education and technology. Productivity analysis and cost benefit analysis will show rising trends in production and human welfare.

Stage III: Survival Period

From the sixth decade until death there is no productivity by human capital except in rare cases.

Education is primarily concerned with stage one.

Salient Features of Human Capital

- (i) Human capital has longer gestation period than non-human capital.
- (ii) Human capital is part of the individual—cannot be sold, mortgaged or transferred.
- (iii) Human capital appreciates in value up to a point in time.
- (iv) No two units of human capital are similar.
- (v) Marginal returns may vary between persons with the same qualifications.
- (vi) Human capital has non-economic attributes also.
- (vii) Human capital is mobile and is subject to salary and status considerations.
- (viii) Depreciation of human capital is difficult to calculate.
- (ix) Productivity of the human capital is influenced by the social and cultural environment.

Human Capital Depreciation

The State of World's Children-1990, a Unicef document warns:

Investment in human capital in the form of nutrition, basic education and health cannot be postponed.

It either takes place at an appropriate age when need is present—or it does not. For the young child, there is no second chance. The unemphasised tragedy of the disinvestment in human capital in the eighties will be carried forward in stunted bodies and deficient education well into the twenty-first century.

Education as Investment

A dollar or rupee invested in the education of human beings will often bring a greater increase in national income than a dollar or rupee devoted to railways, dams, machines, tools or other tangible goods (J.K. Galbraith).

Through the process of education human beings become more productive. Educating the people requires a lot of money. But economists prefer to call it not as expenditure, but as investment. Adequate investment in education is reflected in the economic growth of countries. Share of education in economic growth was found to be thirty-four per cent in India, eighteen per cent in USA twelve per cent in Kenya and eleven per cent in Chile in 1973.

Rate of Return

Returns are expected from investment whether it is in physical capital or in education. In some countries the rate of return for education is higher than current bank rates on long-term deposits.

Table 14: Rates of Return

Country	Rate of return on assets (%)	Social rate of return (%)	Per capita income (Dollars)
USA	9.7	13.6	2361
Canada	12.9	12.4	1744
UK	8.6	4.6	1660
India	12.5	17.2	73
Japan	20.4	5.1	464

Source: (George Psacharopoulos, 1973)

Private Return and Social Return

Educational investment are made by individuals and families with an eye on future earnings. Not only the expenses for education are regained, but many times over the initial investment are also enjoyed during one's career. Persons with higher educational qualifications enter the job market at a later age, but their initial salary and earning differentials raise steadily. Thus age-earning profile differentiates several levels in the hierarchy.

A World Bank study of 44 countries (1983) gave the following findings about rates of return:

- (i) The rate of return to investment at any level of education in developing countries is far above ten per cent.
- (ii) The rate of return to investment in primary education are higher relative to investment in other levels.
- (iii) The return to investment declines as the educational level increases. The absolute returns to education are the highest in poor countries.
- (iv) The private returns to education is generally several points higher than social rate of return.

Social rate of return differs between general education course and technical course. It was worked out at 16.6 per cent for engineering courses and 12.7 per cent for courses in humanities in India in the year 1982.

Table 14 A: Rate of Return Estimates (Comparison)

Author	A. Private Rates of Return						B. Social Rates of Return						
	Reference Period -	Region	Lower	Higher	Secondary	Graduate	Lower	Higher	Secondary	Graduate			
			Primary	Primary			Primary	Primary					
			Illiterate	Lower Primary			Higher Primary	Matriculate			Illiterate	Lower Primary	Higher Primary
1. Malcom Adishesiah	1970-71	Tamil Nadu	39.6	6.9	83.5	7.4	22.4	5.5	74.7	7.0			
2. D.S. Kothari	1955-56	Bombay	-	-	-	14.0	-	-	20.0	13.0			
3. Harberger	1957	Hyderabad	-	-	-	-	-	-	11.9	16.9			
4. Nalla Gounden	1960-61	Urban India	23.0	13.0	10.0	8.1	17.0	11.8	10.2	7.0			
5. Blaug, Layard and Woodhal	1960-61	Urban India	18.7	16.1	11.9	10.4	15.2	14.2	10.5	8.9			
6. Pandit H.N.	1964-65	All India	17.3	18.8	More than 26.5	-	13.4	15.5	More than 26.5	8.7			
7. —	1959	USA	Primary		155.1	19.5	Primary		13.6	17.8	-	14.0	9.7
8. —	1966	UK			-	6.2			12.0	-	-	3.6	8.2
9. —	1961	Japan			-	6.0			9.0	-	-	5.0	6.0
10. —	1966	Philippines			7.5	28.0			12.5	7.0	-	21.0	11.0
(7%)													

Source: H.N. Pandit *Investment in Indian Education—Size, Sources and Effectiveness*, IIEP occasional paper No 43, UNESCO, 1976, pp. 59-61.

Private Rates of Return

Up to matriculation	:	Very high
Up to first degree	:	10%
Post-graduate (Commerce)	:	3%
Post-graduate (Arts)	:	0.3%
Bachelor of Education/Agriculture	:	2%

Social Rates of Return

Matriculates	:	300%
B.A., B.Sc., B.Com.	:	20%
Ph.D.	:	4%

Source: (NCERT, 1969)

The unsuitability of university education in economic development in India is a matter of everyday observation and on this basis if nothing else, one can safely conclude that the economic value of university education or higher education is surely small, even negligible and thus not worthy of the same attention as considered deserving by the lower levels of education (Muzammil).

Limitations of Rate of Return Analysis

1. Rate of return on education cannot be accurately measured by earning differentials.
2. Rate of return should not be limited to productivity alone, it ignores the social and technical skills acquired by individuals.
3. Private and social net products of education are important for social analysis as the qualitative aspects are seldom identified and measured.

Input-Output Analysis

Prof. Wasily Leontief of Harvard University developed the input-output model of production process to maximise output with optimum use of inputs. Educationists are adapting this model in educational system also. The product mix of an education system can neither be quantified nor the product streamlined as in the case of industries. We should take an assessment after analysing the hard facts in the educational scenario and evolve a model capable of meeting the challenges and overcome the constraints.

Table 15: Input Process Output Model in the Education System

Inputs			Process	Outputs	
Monetary	Non-Monetary	Human		Qualitative	Quantitative
Grants	Environment	Teachers	Curriculum	Development of culture, value	Percentage of successful candidates by divisions
Salaries	Autonomy	Students	Syllabus		
Scholarships	Supervision	Administrators	Textbooks	Orientation	
Pension benefits	and management	Office staff	Testing	Citizenship	
Facilities	Equity		Services	Humane outlook	Unit cost
	Equality		Instructional methods	New skills and attitudes	Working days
			Co-curricular activities		Working hours
			Learning experiences		

Realities in the Indian Education System

(i)	Students at all levels (1986-87)	:	Over 110 millions
(ii)	Teachers at all levels (1986-87)	:	Over 3.5 millions
(iii)	Household expenditure on education (1980-81)	:	Rs. 36
(iv)	Per capita income (1987-88)	:	Rs. 3,284
(v)	National income (1987-88)	:	Rs. 2,57,813 crores
(vi)	Enrolment		
	i) Age group 6-11	:	93 per cent
	ii) Age group 11-14	:	51 per cent

Evaluation

1. Define the concept of human capital.
2. Discuss the points of view regarding education as investment.
3. Distinguish between social rate of return and private rate of return.
4. Explain the role of rate of return approach in Indian education.
5. How will you apply the production model of inputs and outputs in education? Give illustrations.

EDUCATIONAL FINANCE

Role of Government

Unless education is made free or heavily subsidised it cannot reach the under-privileged. Government spending has become necessary to update the content and methodology of education, to provide new services like guidance and counselling, to give vocational bias to secondary education and to equalise educational expenditure huge government financing has become essential.

Principles of Educational Finance

Governmental assistance is given to recognised institutions subject to many conditions. Funds so provided should be adequate, care should be taken to spend the money frugally; rules governing financial aid should not be very rigid and impractical and personal bias should not influence decisions. Priorities should be based on the National Policy on Education.

Sources of Finance

Education is placed in the Concurrent List (part III of Seventh Schedule). Central Government manages several universities and gives funds to UGC, NCERT to promote education. State Governments play a major role in the promotion of education at all levels. Local bodies are permitted to open and maintain schools. International agencies provide funds in special cases: many religious and secular organisations besides philanthropists have contribute funds. In 1978-79, sources and their financial contribution were as follows: Government 80 per cent, Tution Fees 12 per cent, Local bodies 5 per cent and private sources 3 per cent.

Distribution of Expenditure

Teachers' salary is the major item in the educational budget. In 1985-86, it was 89 per cent for primary education, 73 per cent for secondary education and 63 per cent for higher education. It is evident that the provision of amenities suffer from want of funds.

School education is receiving more attention. In 1978-79, all India average allotment for primary education was 48 per cent, for secondary education 32 per cent and higher education 20 per cent.

Table 16: Direct Expenditure on Education

Level of Education	Expenditure (in millions of Rs)		Percentage in the Total Expenditure	
	1974-75	1975-76	1974-75	1975-76
Pre-primary	29	33	0.11	0.11
Primary	3849	4463	14.30	14.51
Middle	2926	3410	10.87	11.08
Secondary	15730	17983	58.46	58.45
Professional	1417	1539	5.27	5.00
General Higher	4375	3339	10.99	10.85

Source: (Panchmukhi, 1989)

Educational Budgets

Educational needs are given more attention in the advanced states. They may have to spend not less than one-fourth of their annual income to implement the New Education Policy.

Table 17: Education Budget of Select Indian States

State	Share in the State Budget (1978-79) (Percentage)	Per Capital Expenditure on Education in Rupees (1984-85)
Uttar Pradesh	26.3	52
Bihar	31.2	65
Madhya Pradesh	24.2	62
West Bengal	24.8	84
Maharashtra	21.4	103
Punjab	27.0	117
Orissa	23.8	65

Capital Outlay

Investment in developing the physical facilities of institutions will go a long way in improving the quality of education. While the Asian Model developed by UNESCO recommended one third of the educational

Table 17 A: Asian Model (1965-1989) Capital Cost Per Pupil Place (1964-80) in US Dollars at Constant Prices

Level	Net Building cost per SQM	Area per pupil place SQM	Net Building cost per pupil place	Site costs	Furniture and equipment	Total
<i>First Level (I to VII)</i>	27	1.3	35	4	7	46
<i>Second Level (VIII to XII)</i>						
Lower State (VIII to X)	40	3.0	120	36	30	186
General Vocational	40	4.0	160	48	53	261
<i>Upper State (XI to XII)</i>						
General Teacher Training	40	3.0	120	36	30	186
Technical	40	5.0	200	60	86	346
Residential Facilities for pupils (teacher training)	45	13.0	585	175	180	940
<i>Third Level XII</i>						
Science, Science based and technological (XII +) and technical (XII-XIV)	60	16.0	960	480	640	2080
Art humanities, social science etc (XII +) and teacher training	60	6.0	360	180	120	660
Residential Facilities for students	55	13.0	715	357	225	1297

budget for capital outlay, the Indian Education Commission (1966) recommended one-fifth; in 1987-88 it was less than ten per cent.

National Income and Education

The target is to spend not less than six per cent of the national income. During 1985-86 it was around five per cent.

Table 18: Expenditure on Education as Percentage of Gross National Product

Country	Percentage of GNP for Education 1986
Saudi Arabia	
Israel	10.6
Guyana	10.0
Zimbabwe	10.1
Malaysia	7.9
Denmark	7.8
Canada	7.7
Bulgaria	7.6
USSR	7.1
USA	7.0
UK	6.7 (1983)
	5.3 (1985)

Source: Yearbook of Indian Education (1988-89)

Role of Private Enterprise in Education

Some private institutions have built up good traditions and high standards despite their meagre financial contribution. Of late, many private institutions are coming up with commercial motives. The Indian Constitution permits the starting and maintaining of private schools. Regulation and not nationalisation of all schools is the solution. The state provides the following types of grants to recognised schools, subject to many conditions.

i) **Staff Grant:**

Usually teachers' salary is met in full by the education department.

ii) **Maintenance Grant:**

A percentage of the salary bill is given as maintenance grant taking into account only 'approved expenditure'.

- | | |
|----------------------|--|
| iii) Matching Grant: | The Government gives fifty per cent of the expenditure on durable costs like buildings. Influential managements in urban areas get most of the benefits. |
| iv) Special Grants: | To meet an emergency or to launch a special scheme, special one time grants are given. |
| v) Block Grant: | It is given to local bodies on the basis of population. |

Prudence in Spending

Effective fiscal administration is based on budget making, accounting, auditing and submission of balance sheet. With the limited resources at hand, more could be achieved through constructive procedures and proper coordination of the schemes.

Kothari Commission on Educational Finance

The Indian Education Commission (1966) recommended special consideration for the under-mentioned areas.

- i) Expansion of loan scholarships to cover ten per cent of the students.
- ii) Provision of free scholarships to the weaker sessions.
- iii) Larger allocation to UGC to expand research.
- iv) Development of agricultural, engineering and medical education.
- v) More assistance to teacher education, model schools, production of childrens' literature, etc.

Economy Measures

The commission suggested quite a few methods to reduce educational expenditure.

- i) type design low cost school buildings which could be built with locally available materials.
- ii) cooperative sharing of expensive and scarce facilities by all schools in a locality.
- iii) using school buildings for longer duration.
- iv) increasing pupil-teacher ratio and working hours.
- v) linking education to manpower needs.
- vi) special care of gifted children.

- vii) reducing wastage in the educational system.
- viii) making schools economically viable.
- ix) thrust to non-formal education.

National Policy on Education (1986)

The present policy encourages self-supporting institutions; wants to enhance fees at higher education level gradually; restrict admission at university level; make teachers accountable; entrust adult literacy programmes to voluntary agencies and pay more attention to literacy for all by 2000 A.D.

Evaluation

1. Describe the principles and procedures adopted in giving financial assistance to educational institutions.
2. Classify educational grants to institutions and point out the merits and limitations of each type.
3. Compare and contrast the stand point of Kothari commission and New Education Policy on educational finance.
4. What are the effects of government financing of education in India? Give statistical support to your answer.

EDUCATIONAL PLANNING

Plan for Progress

Planning is a forward looking process and is directed to achieving predetermined goals. Plan is to act with purpose, to choose (Robbins). Planning is an orderly arrangement of the future (Pigou). Planning and doing are separate parts of the same job; they are not separate jobs (Peter Drucker).

Planning is an integral part of socialist economy. Unplanned socialism would scarcely be practicable since the responsibility of operating the means of production would imply eventual planning (Hugh Dalton). Economic plans have worked well in USSR. The New Deal in USA. Tennessee Valley Authority Plan and even the NAZI Plan produced good results. Champions of planning in India include Jawaharlal Nehru, M.N. Roy, Ashok Mehta, K.T. Shah and J.C. Kumarappa.

Educational Plans

Educational plans should synchronise with national plans. The obvious objectives are:

- (i) to bring about coordination of decisions relating to the different sectors and levels of educational system,
- (ii) to bridge the gap between policy making and administration, and
- (iii) to plan the output of skills, taking into consideration the lead time for professions, to meet future demands and ensure balanced growth.

Goal Orientation for Educational Planning

The National Policy on Education (1986) has the undermentioned goals.

1. Emphasis on socio-economic well-being, competence and creativity of the individual.
2. Development of knowledge and skills in various areas.

3. Development of knowledge and skills in employment opportunities.
4. Integration of the individual in the social system.
5. Development of values—sense of right and wrong.
6. Education should ensure equality of opportunities.
7. Development of spirit of adventure and mass participation in various programmes.
8. Promotion of integrated and holistic packages of formal and non-formal learning.

Planning at Different Levels

The National Planning Commission formulates the Five Year Plans and gets endorsement by the National Development Council and the Parliament. Yojana Bhavan, New Delhi is the headquarters of the Planning Commission which also monitors the plan's progress and makes necessary corrections.

At the state level there is a State Planning Commission/Planning Board which prepares development plans for the state for inclusion in the National Plan.

At the District level there is the Zilla Parishad/District Development Council which recommends urgently needed schemes of the area.

The planning process in India is likely to become more decentralised enabling popular participation and speedy execution of schemes needed by the people.

Approaches to Educational Planning

Demand for Places

Robbins committee report on higher education in Britain applied the demand for places (seats) approach for estimating the total entry into higher education. But the intake of educational courses at different levels was determined by manpower needs. Social demand must be respected in a democracy, but surplus production of highly skilled manpower will remain underutilised in the country.

Rate of Return

Educational planning and decision making will be influenced by anticipated social returns. The system will respond to material considerations, and decisions and investment by individuals and the state

will have an eye on future earnings. There is difficulty in calculating the real costs of the various inputs; likewise the market prices of manpower, called shadow prices by Eckaus, are subject to various considerations.

Manpower Needs

The output of the education sector is determined by forces in the job market. Needs of agricultural, industrial, commercial and other sectors of the economy are the deciding factors in evolving a policy of enrolment, without ignoring cultural development.

These three economic approaches gave rise to a number of models in educational planning.

Defects in Indian Planning

Though India's progress through planning was good, we could have done better if a more realistic approach and popular enthusiasm were evident. Critics have pointed out many shortcomings, specially in educational planning.

Malcolm Adiseshiah

Educational management is the handicraft stage. These are:

- i) programme gap between education planning and educational achievement;
- ii) communication gap between policy pronouncement and actual implementation.
- iii) responsibility gap between the new tasks facing the country and ad hoc crisis like response.
- iv) attainment gap between aims and objectives and the rules and procedures established to attain them.
- v) integrity gap between professed democratisation of education and the elitist character of management.

V.K.R.V. Rao

There has been too little emphasis on a real balance between the provision of general and vocational education. While there has been some diversification of education, it has not made much impact on manpower needs, or geared to our development programme. Wastage and stagnation are found all along the line in our educational system.

S.N. Mukherji

Our plans look forward to the monsoons for their sustenance and growth. Unfavourable weather at times results in drastic cuts in the plan allocations and the greatest economy is made in the educational budget. This reminds one of Oliver Twist who was always asking for more food and was always refused.

J.P. Naik

Expenditure orientation is a fundamental weakness of our plans. We have not achieved adequate returns for what we have invested in education. Educational planning lacks clear vision and definite direction. Expenditure of money should go along with thought and human effort which will help us to raise to the occasion.

Prem Kirpal

In India education has so far received low priority in terms of resources in spite of loud professions of its over-riding importance. Eloquent words have not been matched by adequate deeds and the gulf between thought and action has widened, resulting in lethargy and confusion instead of intense and sustained action by all concerned.

Research and training programmes were neither developed adequately nor applied to qualitative improvements which failed to materialize. The institutional infrastructure remained almost the same in form and functioning as was inherited from the neglect and inertia. Quality declined and only quantity exploded.

Planning Models

1. Macro Model

It was the systems approach, treating education as a sub-system of the social system. It views education in the overall perspective of economic growth and human resource development of the country. It is in tune with the needs, goals and aspirations of the country and naturally is designed as a long-term plan. A comprehensive educational plan is flexible, timebound, provided with in-built monitoring system and achieves maximum coordination. (See figure 2)

2. Micro Model

It is concerned with developing the unit. Planning begins from the institution and it is called Institutional Planning. J.P. Naik was a strong

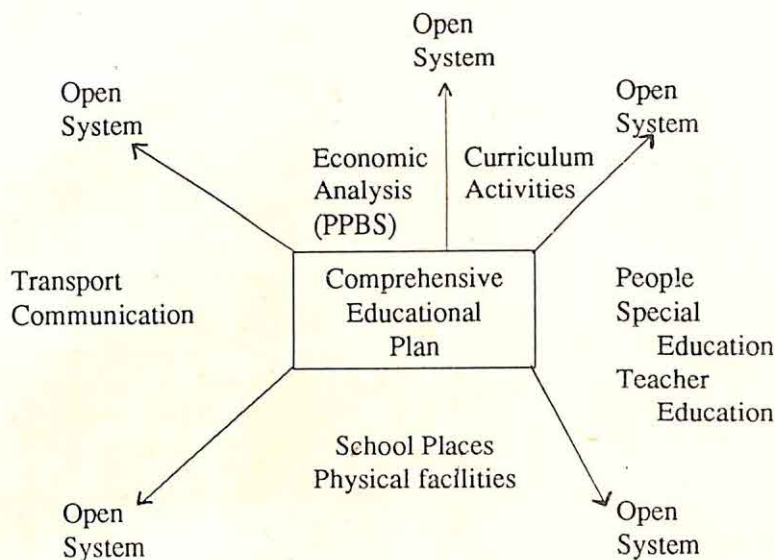


Fig 2: Comprehensive Educational Plan

advocate of institutional planning as it is based on the actual needs of the users (schools) and the ability of the implementors (teachers). The stress is on non-monetary inputs—idle manpower resources in the neighbourhood. There will be democratic planning at grassroots level and the emphasis will be on making the best use of available resources. Its success depends upon the willing cooperation of parents, students and teachers. Curricular and co-curricular activities could be planned and implemented with little government support.

3. *Simulation Model*

Sometimes it saves money and time if we can imitate a tried and tested educational model. Our university education was modelled on the pattern of England. The Kothari Commission recommended some of the successful educational practices in the west for adaptation in India.

Education under the Plans

There has been phenomenal expansion of education under the Five Year Plans. Universalisation of primary education, vocationalisation of secondary education, equalisation of educational opportunities and improving the content and quality of higher education are the goals to be achieved in the shortest possible time.

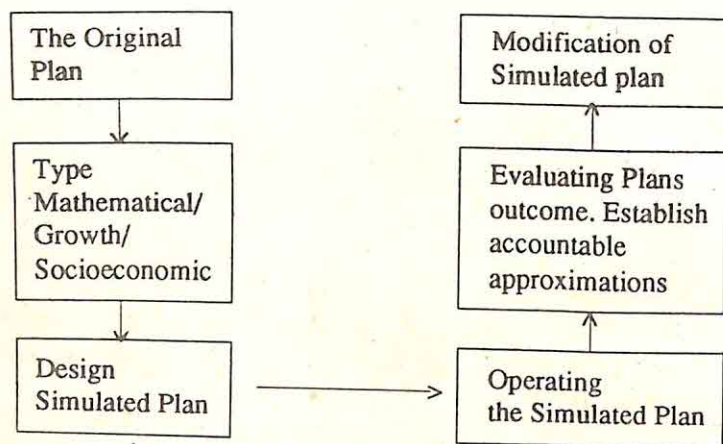


Fig. 3: Simulation Model

Plan Strategies

- i) Combination of formal and non-formal methods, educational technology, teacher training, improvement of physical resources and involvement of the community.
- ii) Orientation courses to teachers to upgrade their competence.
- iii) Special programmes for girls and weaker sections.
- iv) Effective use of electronic media to promote national integration and cultural heritage.
- v) Technology mission to eradicate illiteracy.

Allocation of education in terms of money has multiplied several times, but the outlay in terms of percentage to the total volume of investment has decreased. Planners have not chosen to give education number one priority in the Plans. As Maulana Abul Kalam Azad remarked education is the fulcrum of developmental planning. At least a ten per cent allocation for education and effective fiscal management are necessary to create a healthy, democratic, egalitarian and forward-looking society.

Educational outlays for all the Five Year Plans are given in Table 16 and sectoral allocations are presented in Table 17. Quantitative expansion of general education up to 1988-89 is shown in Table 18.

Table 19: Education in the Five Year Plans

Five Year Plan	Total Outlay (in crores)	Outlay for Education (in crores)	Expenditure (percentage)
First Plan (1951-56)	2069	170	7.9
Second Plan (1956-61)	4800	277	5.8
Third Plan (1961-66)	7500	560	6.9
Fourth Plan (1969-74)	15902	822	5.2
Fifth Plan (1974-78)	38853	1284	3.3
Sixth Plan (1980-85)	97500	2524	2.6
Seventh Plan (1985-90)	180000	6383	3.5

Source: (Planning Commission, New Delhi)

Table 20: Sectoral Allocation (In crores of Rupees) Plan

Sector	I	II	III	IV	V	IV	VII
Elementary	93	93	209	246	410	906	General 4775
Education	(55)	(34)	(37)	(31)	(32)	(36)	Education (74.8)
Secondary	22	49	88	118	250	398	Technical 682
Education	(13)	(18)	(16)	(14)	(19)	(16)	Education (10.7)
Others	54	142	297	448	625	1304	Arts and 482
	(23)	(49)	(47)	(55)	(49)	(48)	Culture (7.8)
							Sports and 444
							Youth Services (6.9)
Total	169	277	560	822	1285	1285	6383

Figures in parenthesis denote percentage of total outlay.

Table 21: Progress under Seven Five Year Plans

	1950-51	1988-89
A. Primary Education		
i) No. of primary schools	2,10,000	5,37,000
ii) Enrolment	192,00,000	9,00,00,000
iii) Percentage of enrolment in the age group 6-11	43%	96%
B. Upper Primary		
i) Number of schools	14,000	1,37,000
ii) Enrolment	31,00,000	2,88,00,000
iii) Percentage of enrolment in the age group 11-14	13%	53%
C. Secondary and Higher Secondary Education		
i) Number of institutions	7,000	69,000
ii) Enrolment	14,00,000	1,76,00,000
D. Girls' Education (Percentage of enrolment to the total)		
i) Primary level	28%	40%
ii) Upper primary	16%	36%
iii) Secondary level	14%	31%
iv) Higher secondary		31%
E. University Education		
i) Number of universities	27	180
ii) Number of colleges	695	6,500
iii) Enrolment	3,63,000	38,14,000
iv) Percentage of enrolment in the age group (17-25)	0.8%	5%

Sixth Five Year Plan: A Review

- a) Primary education: Enrolment target was achieved
- b) National adult education programme: 20 million young illiterates were made literate.
- c) Community singing for national integration was made a national movement

- d) Twenty States and nine Union Territories implemented the New pattern of education.
- e) Secondary education: Additional enrolment 17 million students value orientation was given
- f) INSAT programmes: Covered six states (Andhra Pradesh, Bihar, Orissa, Gujarat, Maharashtra, Madhya Pradesh).
State Institutes of Educational Technology were started.
- g) Vocational stream: Disappointing performance, only 55,000 joined vocational courses at higher secondary level.
- h) Higher education: Under-graduate courses were restrucured standard of teaching was improved. UGC programmes were telecast post-graduate education and research were strengthened.
- i) Women's education: (1984-85) Showed continuous progress.
Enrolment of students in degree courses to total.
- | | |
|----------------------------|-------|
| A. Teaching 48% | |
| Engineering and Technology | 5.2% |
| Medical | 27.4% |
| Agriculture | 4.0% |
| Veterinary science | 4.8% |
| Law | 7.5% |
| B. Arts | 39.6% |
| Science | 29.7% |
| Commerce | 18.3% |

Seventh Five Year Plan (1985-1990)

The public sector outlay for the Seventh Five Year Plan is Rs. 1,80,000 crores. Education is to get Rs. 2,399 crores from the centre, Rs. 3,499 crores from the States and Rs. 505 crores from the Union Territories.

Thrust Areas in Education

1. Achievement of universal education.
2. Eradication of illiteracy in the age group 15 to 35.
3. Vocationalisation and skill training programmes at different levels of education.
4. Upgradation of standards and modernisation at all stage of education with effective links with the world of work and with special emphasis on science and environment and on value orientation.
5. Provision of facilities for education of high quality and excellence in every district of the country.
6. Removal of obsolescence and modernisation of technical education.

Strategies

- a. Effective decentralised planning and organisational promotion of non-formal and open learning systems.
- b. Adoption of low cost alternatives.
- c. Forging of beneficial linkages with industry and development agencies.
- d. Mobilisation of community resources and societal involvement.

Major Educational Schemes in the Seventh Plan

1. *Operation Blackboard*

It is proposed to provide minimum facilities to all primary schools before the completion of the Eighth Plan.

2. *Navodaya Schools*

Every revenue district will have a model school with free education, boarding and lodging to encourage bright boys and girls living in villages.

3. *Teacher Education*

Select teacher education institutions will be upgraded. District institute of education and training will provide in-service education to primary school teachers, Secondary Teacher Education Institute will give orientation courses to secondary school teachers and staff of adult education programmes and Institute of Advanced Studies in Education will conduct research in education, hold seminars for administrators and extension programmes involving innovative practices. All these institutions will also have their regular teacher education programmes.

4. *Higher Education*

Councils of higher education will be set up. Admissions are to be made on the basis of capacity. Affiliation system, in due course, will give place to autonomous colleges. Combination of courses are to become more flexible and encouragement to be given to inter-disciplinary approach.

Evaluation

1. Explain the need for educational planning and point out the approaches followed.
2. Describe with illustrations any two models of planning.
3. Trace the progress of secondary education in your state during the Five Year Plans.
4. Review the performance of the education sector during the Seventh Plan period.
5. What do critics say about educational planning in India? Suggest suitable remedial action.
6. Write short notes on:
 - i) Institutional planning.
 - ii) Operation Blackboard
 - iii) N I E P A
 - iv) Perspective Plan
 - v) Gestation period.

GLOSSARY

Acceleration:	Accelerated effect of a change in production function or income on levels of investment or inventory may be positive or negative
Age earning profile:	Statistics relating to earnings, educational qualifications and age of the working population.
Capital intensive:	Requiring heavy doses of capital as in the case of iron and steel and shipbuilding industries.
Coefficient of correlation:	A measure of the closeness of the correlation between two variables. It is expressed as a decimal between 0 and 1; and carries a plus or minus sign to indicate positive or negative correlation.
Cobb Douglas formula:	$X_t = f(L_t, K_t, A_t, t)$ X=National Income; K=Capital L=Labour, A=Land; t=time factor/ technological improvement
Cost benefit:	A systematic comparison between the cost of carrying out any service or activity and the value or benefit of that service or activity, quantifying as far as possible all costs and benefits whether direct or indirect; financial or social.
Cost-effectiveness:	A generalised variant of the cost benefit analysis emphasising the process of maximising effectiveness to a given value or investment, usually related to analysis of public sector programmes.

Gross domestic product:	Value of domestic product from all sectors taken over a series of years and adjusted to discounted changes in the value of money.
Gross national product:	GDP at factor cost plus net income from abroad (export minus import).
Human capital:	Monetary investment made in people by way of education and training for the sake of future financial returns.
Inputs in education:	Some mix of the money being spent, aspects of the teaching staff or materials supplied, and socio-economic variables to represent family and home background.
Internal rate of return:	Estimated by finding rate of return, present value of cost outlays and present value of additional income flows in the system.
Lifetime earnings:	Earnings throughout the active working years of an individual (in most cases 18 to 60).
Marginal cost:	The marginal or incremental cost of education is the extra cost incurred when one additional student is enrolled in an institution.
National income:	Generic term for all that is produced earned and spent in a country in a financial year.
O E C D:	Organisation for Economic Cooperation and Development—Set up in 1960.
Open university:	Innovation to make higher education accessible to adult learners in a non-formal setting. A major step in democratising education.
Total cost:	The value of all the real resources which are devoted to education by society.

Opportunity cost:	Also called alternate cost or user cost; opportunity costs consider what must be foregone in real terms in order to produce a unit of output of some good or service.
Outputs in education:	Final achievement of the education system, including students' performance in examinations.
Per capita income:	Income per head; national income divided by the total population.
Outlay:	Total expenditure on currently produced consumer goods and services, on producers goods and on public services, i.e. on consumption and real capital investment private and public.
Poverty line:	Calculated on the basis of non-availability of adequate calories from low cost food to poor people.
P P B S:	A method of preparing the spending programme of a department in such a way that the entire budget is distributed among a number of specific programmes.
Production function:	Mathematical expressions showing the relationship between inputs and finished products usually based on repeated statistical testing.
Skill intensive:	Requiring special training and higher skills as in the case of electronics.
Social rate of return:	It is the rate of return to total resources cost, usually indirect, accruing to society.
Unit cost:	Cost per unit—total cost divided by the number of units.

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